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## MAZI deliverable report D2.6 Design, progress and evaluation of the Deptford Creeknet pilot (version 3)

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## ICT - Information and Communication Technologies

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### D2.6 Design, progress and evaluation of the Deptford Creeknet pilot (version 3)

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Task Leader: Mark Gaved (Open University)

Author: Mark Gaved (Open University)  
James Stevens (SPC)  
Gareth Davies (Open University)

Consisting of:

Organisation Name	Short Name	Country
University of Thessaly	UTH	Greece
NETHOOD	NH	Switzerland
Edinburg Napier University	NU	United Kingdom
Universitat der Kunste Berlin	UdK	Germany
The Open University	OU	United Kingdom
Slacktivist Limited	SPC	United Kingdom
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UnMonastery	UM	United Kingdom

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## Executive summary

This deliverable represents the third of a series of three reporting on the design, progress and evaluation of the Creeknet pilot. We describe progress towards tasks identified in the Description of Work (DoW) for Task 2.2. In this deliverable we report on activities in Year 3 of the project (months 25-36); summarising reflections across the lifetime of the Creeknet project; and offer considerations of potential future directions after the end of MAZI project funding.

Creeknet has been one of four pilots and a key contribution has been its diverse range of multiple deployments of MAZI in action. This has resulted in rich user feedback to the project on both the MAZI methods and technical requirements of the iterations of the toolkit, providing understanding of how different communities experience MAZI 'on the ground'. In Year 3, as in Year 1 and 2, we have gathered valuable feedback through MAZI toolkits in action, and more broadly, uptake of the MAZI concept of DIY networking across groups with which we have engaged.

We have collaborated with new communities and continued to work with existing contacts, and we are seeing a broadening out of activities as unexpected uses and appropriations occur. We report on examples of reactions, learning, and results in groups with which we have worked, and the developments of social networks through engagement with MAZI. We are now seeing a number of groups that have been introduced to MAZI independently engaging other groups in their networks with MAZI and DIY networking concepts, and we reflect on onward sustainability beyond the lifespan of the funded EU project, and opportunities going forwards.

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## 1 Introduction

This deliverable represents the third of three reporting on the design, progress and evaluation of the Creeknet pilot. In this deliverable we report on activities in Year 3 of the project (months 25-36); evaluation of activities carried out; summarising reflections, and considerations of onward sustainability and future directions after the end of MAZI funding. As with the previous reports (D2.4 and D2.5), we use the framing of the 6Ps to structure the document (Holliman et al., 2017):

- *'Preparedness'*: identifying local contexts, understanding of the challenges faced and the researchers' preparations for dealing with these challenges. This is discussed in Section 2, "Pilot context" where we provide an overview of the activities; and in detail in Section 5, "Pilot activities" where we describe the context for the communities with which we have engaged, and the activities that have happened both in and beyond the Deptford Creek area.
- *'Politics'*: understanding the local social and political contexts in which the research was carried out. This is described in Section 5, for example, in Section 5.1.2 we provide an example of where local development has threatened moorings and access to land for local residential boaters, and in Section 5.1.5 we describe how MAZI and DIY networking has been used by protestors occupying sites seeking to have their voice heard.
- *'People'*: identifying the people that have been involved or affected by the work: the researchers, the community partners with whom we engaged, other community participants, and others affected by the work. An overview is provided in Section 3 "Key stakeholders" and described in detail in Section 5, "Pilot activities", with Appendix A summarising activities across all groups with which we have engaged.
- *'Purposes'*: clarifying the aims and objectives of the research from the perspective of MAZI, the participants involved and other stakeholders. The MAZI perspective is described in Section 4 "Purpose" and participants' ambitions are explained in Section 5, "Pilot activities".
- *'Processes'*: explaining the approach, methods and techniques that have been followed by the research team. These have been described in earlier deliverables, and we refer to approaches taken as we describe work with engaged communities in Section 5, "Pilot Activities" and reflect on the effectiveness of methods in Section 6 "Evaluation and outcomes".
- *'Performances'*: considering what was found and the extent to which this met the objectives of the research. We describe outcomes on work carried out in Section 6 "Evaluation and Outcomes" and reflect on sustainability and future directions in Section 7 "Sustainability" and Section 8 "Future Directions", with a summary of activities undertaken in Appendix A.

## 2 Pilot context

Rapid urban change continues in the Deptford area with new building developments regularly changing the skyline of Deptford Creek. Increased attention is being paid to community spaces where local activities have flourished previously with little attention noted beyond the immediate area. This fast-moving change has affected the ability of some groups to commit to MAZI activities, while elsewhere it has catalysed opportunities for action. The Deptford Creek boating community continues to be under threat of losing their moorings and access to land due to building developments, and debates continue around their legal status and rights of residence. The former Minesweeper boat, which burnt out in the January 2017 fire, remains in place and discussions continue positively about its reuse as an artificial environmental reef. This would support biodiversity in the river, and has brought together different stakeholders debating its future management, including the Minesweeper Collective, Creekside Discovery Centre, and the Port of London Authority. Discussions have emerged about whether MAZIzones could be used to promote the voice of protestors seeking a voice, including those seeking to defend Deptford's Tidemill Gardens, a community owned garden, against redevelopment. Social activism has been a theme common to greenspaces, redevelopment plans, art students supporting the rights of cleaners, and the documentation of radical archives, linking together a number of MAZI actors.

'Eddies of activity' - interactions with groups beyond the immediate boundaries of the Deptford Creek area - are increasing as MAZI becomes established, and in turn continue to inform Creeknet. As a wider range of groups explore the broader MAZI concepts of DIY networking, we are seeing appropriations and developments independent of our original actions, indicating sustainability beyond the lifespan of the project. For example, Central St. Martins School of Art (CSM), collaborators in Year 2 for the British Council funded Sao Paulo 'Reverso' project (see D2.5) have continued to show interest in MAZI and DIY networking methods, using MAZIzones as virtual studios for their undergraduate design students. They are also exploring its use as part of their work based in a local school. Because of their photogrammetry work in Reverso, CSM were invited by Creeknet to make a visual record of the Tidemill Gardens before its locally unpopular seizure from a community group and preparation for redevelopment into housing, bringing an eddy back into the Creeknet geographical area.

MayDay Rooms, a radical archive, have taken MAZI forwards as an archiving tool, and independently begun to work with 56aInfoShop, another social activist centre and information archive, using MAZI to help make their resources accessible. Science Made Simple have reimagined MAZI as a public engagement evaluation tool to help understand what families learn during a science talk. These activities push MAZI in unexpected directions and provide insights that improve the toolkit.

A major event for the third year of the Creeknet pilot was partner SPC losing their offices of 17 years at short notice. This caused physical and organisational disruption and required SPC to draw on their social network to help with a move to new premises. SPC lost their long established high speed wireless network connectivity across London, disabling downstream provision to a number of clients and community organisations. Creeknet activities planned in the final year included a focus on the development of existing infrastructure of the SPC community network OWN ('Open Wireless Network') and this greatly changed what was possible while new offices were sought and the infrastructure reconfigured.





Figure 1: Greenwich Borough Hall, formerly home to SPC, under occupation by protesters in May 2018

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### 3 Key stakeholders

The partnership of the OU and SPC continue to drive Creeknet and engage with a range of community groups and individuals in the Deptford Creek area. In Year 3, key groups worked with in the Deptford area were: Creekside Discovery Centre, Friends of Deptford Creek, Babar Luck and fellow musicians, Gordon Cooper (Stowage Films), SMASHfest UK, and local protest groups.

'Eddies of activity', work beyond the physical proximity of Deptford Creek but related in terms of interest, have continued to emerge leading to further insights that have fed back into the Creeknet work as well as broadening the range of Creeknet's work. These included Central St. Martins School of Art, La Cambre printmakers (Brussels), Open University teacher training in Zambia, ScienceMadeSimple, 56aInfoShop, and two outreach events gaining insights from a wider audience of potential users, held at Creekside Discovery Centre and Central St. Martins School of Art. Cross fertilisation with other MAZI partners has continued and made an increasing impact on our work, and collaborations have enriched Creeknet work with both visits to other locations and other MAZI partners participating in Creeknet activities.

## 4 Purpose

The purpose of Phase 4 as described in the Description of Work was to run the final version of the MAZI toolkit with groups in the Creeknet area; engage groups with the broader MAZI approach to DIY networking; and upgrade SPC's wireless infrastructure across the Deptford Creek area (Months 24-33). Phase 4 was broken down into the following objectives:

- Training and promotion of MAZI 'toolkit' (social as well as technological aspects), carried out using the same methods employed in Phase 3 (Year 2 of the project).
- Upgrade of the OWN wireless infrastructure to enable the support of MAZI services.
- The setting up of an online service to enable communication between the Deptford and Kraftwerk (Zurich pilot) participants to allow exchange of knowledge and ideas around the use of MAZI toolkit.
- To evaluate adoption, appropriation and usage of the final version of the MAZI toolkit in Deptford.

In practice, these ambitions were affected by the changing situation on the ground, and modified accordingly. It became clear through the project that the neat engagement 'Phases' originally described in the Description of Work would coexist as the project continued: co-design processes are often messier than initially expected (Botero and Hyysalo, 2013). Existing Creeknet engagements with groups and individuals triggered further conversations, new groups contacted the Creeknet team or presented themselves as suitable candidates for engagement. Therefore, initial engagement activities such as introducing new groups to the MAZI concepts and helping them get started with their own independent use of the MAZI toolkit which were planned to be carried out in Years 1 and 2 continued to be actions for the Creeknet team in Year 3.

The Phase 4 'infrastructure' activities anticipated that SPC's long standing wireless network connecting communities across the Deptford area would be refreshed, and there would be a focus on exploring how individual MAZI toolkits might interact across a community owned network. SPC's offices with roof space provided antenna mounting for the wireless backhaul, and with the loss of the offices, this aspect of work was disrupted. Until SPC established new offices, Creeknet activities therefore focussed more on the social rather than technical aspects of networking between groups. However in this time, the Creeknet team continued as an active partner on consortium wide discussions around meshing MAZIzones, considering both technical challenges and likely community scenarios derived from Deptford experiences. Towards the end of Year 3, SPC recommenced work on upgrading their reconfigured network, with new mesh nodes for the part of the OWN mesh most closely overlapping with Creeknet, and work is ongoing.

The objective of setting up of an online service to enable communication between the Deptford and Kraftwerk participants to encourage knowledge sharing around DIY networking became operationalised through promotion of MAZI online services. The original ambition was to connect a Deptford housing cooperative that were long standing SPC community network subscribers with the Zurich-based housing cooperative participating in MAZI (Kraftwerk1). We imagined that there would be similarities between the groups, and this might trigger an online conversation that would enable mutual support in managing their own MAZIzones. However, the Deptford cooperative did not take up use of the MAZI toolkit as originally hoped, so this specific activity was unable to be pursued. Nevertheless, a large and diverse range of groups were engaged in Year 3. We now turn to report on approaches taken and actions resulting.

## 5 Pilot activities

In Year 3 we have actively engaged with a range of existing and new groups. Activities have focused around introducing concepts of DIY networking and more specifically MAZI methods, discussion around offline networking, and support in the specific use and deployment of the MAZI software and hardware. Feedback from these groups, along with reflections from the pilot organising partners, have informed the continuing development of the MAZI toolkit both in terms of participatory design methods and practices around DIY networking, and the functionalities of the software and hardware. Feedback has been gathered through conversation, observation, and interviews, and direct experimentation with the toolkit as new versions were released. Reporting was made through contributions on the email lists, posts to the github software lists (issues and recommendations) and direct feedback to the consortium and technical team via workshops and consortium cross-fertilisation events.

A number of groups that we have previously made contact with became inactive in terms of MAZI in Year 3. We recognise that engagement will ebb and flow depending on enthusiasm, capacity, and personal and organisational circumstances. However, we have also seen some groups re-emerge after periods of quiet, which has emphasised the importance of regular community meetings and continued contact.

### 5.1 Creek communities

We have continued to work with communities and groups already contacted in Years 1 and 2, and have reached out to further groups and initiatives in Year 3. As we move towards the end of the funded project, we have consciously extended our reach and sought to make contact with a wider range of groups to work towards a critical mass of self-motivated MAZI enthusiasts as a mechanism for onward sustainability of the MAZI concept. We have connect with further participants in the Deptford Creek area (for example through two ‘widening impact events’ held at Creekside Discovery Centre) and also reached further afield: across London, the UK, Belgium and Zambia. These have enabled the broader discussion of DIY networking and the MAZI approaches as well as deployments of MAZIZones. Existing and new conversations as eddies of activities continue to extend our activities, and in turn, inform the pilot and the development of the MAZI toolkit. Table 1 identifies deployments of MAZIZones in Year 3.

Table 1: Deployments of Creeknet MAZIZones in Year 3

Deployment (actors)	Setting	Context	Purpose	Key tools
Creekside Discovery Centre sensor system	Creekside Discovery Centre	River wall mounted environmental sensing unit	(1) Capture live environmental data and archive (2) Stimulate community conversation around local conditions	Custom code on Raspberry Pi Zero, reporting to remote server (MAZI or other); external environmental sensors (currently temperature)
Babar Luck’s Spaceship	Babar Luck, local musician	Portable MAZIZone carried while performing	Promotion of musician’s activities, archive of recordings, sales avenue, request for conversation	V2.3 MAZI toolkit
Patrick Lyons	Local musician	Portable MAZIZone carried while performing	Promotion of musician’s activities, archive of recordings,	V2.5 MAZI toolkit

			sales avenue, request for conversation	
Stowage Films	Gordon Cooper, film maker's archive	Archive of local photos and films for art gallery	Collection of works as an archive tool and for display at Gallery exhibition	V3.1 MAZI toolkit
Greenwich Town Hall occupation	Greenwich Town Hall	Temporary installation for squatters	Self-publishing channel for occupiers to promote their activities and perspectives	V2.3 MAZI toolkit
SmashFest	SmashFest Science Festival	Temporary installation at event	Recording feedback through the Guestbook	V2.3 MAZI toolkit
56a InfoShop	Radical information and community space	Permanent information sharing tool in community space, London	Archive of resources to enable easier searching and access for visitors	V3.0 MAZI toolkit
Virtual Studio (x4)	Central St. Martin's School of Art, London	Portable Virtual studio for art students	(1) Reflective space to reimagine studios spaces (2) Sharing resources	V2.3 MAZI toolkit
ZEST (x4)	OU International Development project	Portable Teacher training workshop facilitation tool, rural Zambia	(1) Creating community by sharing practices (2) Disseminating resources	V2.3 MAZI toolkit
La Cambre	La Cambre School of Arts, Brussels	(1) Portable MAZIzone for arts project (2) Studio tool for students in Belgium	(1) Recording stories as artist travels (2) shared exploration of art spaces by students	V2.3 MAZI toolkit
Mars Lander	Science Made Simple public talk	Portable evaluation tool for science talk at museum	2 x Guestbook for fun before- and after- talk evaluation activity for family audience	Customised V3.0 MAZI toolkit

### 5.1.1 Creekside Discovery Centre

Engagement with Creekside Discovery Centre (CDC) has led to the development and deployment of a sensor system to enable automated collection of environmental data from Deptford Creek, a tidal tributary of the River Thames. This extends CDC's offering to schools and community groups beyond their current experiential visits to the Creek and enables the collection, dissemination and analysis of environmental data; hence creating longer



term engagements with their audience. CDC identified the sensors and the preferred data to be collected: temperature data at six heights of the river, which has a 6m tidal change twice a day.

Technical development was realised through collaborations with the MAZI technical development team, and the construction and coding of a Raspberry Pi Zero driven system designed by Paul Maher of The Open University's IT department. As a result of Deptford Creek interests in understanding local environmental conditions (catalysed by bee keepers, and residents worried about construction traffic pollution) MAZI toolkits were able to present visualisations of readings from sensors including Raspberry Pi SenseHATs and other custom sensor configurations which had attracted local interest. Given the specific CDC scenario, which required a low power unit to report multiple sensor inputs we worked to build on the existing back-end integration (see Deliverable D1.3 for more details of this work).

Paul collaborated with the Creeknet team, MAZI technical team and Creekside Discovery Centre to design and build an open source system that enabled both local logging and also uploading of log files to remote systems, including MAZI (details here: <https://github.com/paul-maher/creeknet/>). CDC staff helped install the system in July 2018, linking it back to the office network from a fixed point on the river bank, and were trained in its use. Technical conversations are ongoing with the MAZI technical team at UTH to finalise the surfacing of this data through the MAZI monitoring map. There is an ongoing privacy discussion about how the data collected is distributed and who has access. CDC would like to maintain some control over its usage as there is concern about whether commercial organisations in the local area might misuse access. Data privacy is an issue that MAZI engagement sessions have identified as resonating with a number of groups in Creeknet (including for example the boaters represented by the Friends of Deptford Creek) and is a point of cross-fertilisation with other MAZI pilots.

SPC upgraded the CDC network infrastructure as a part of this work, and toward the end of the year began re-establishing the Open Wireless Network, connecting out from CDC and their internet connection to mesh nodes for the nearby Creeknet participants, including one of the boats that is part of the Friends of Deptford Creek and has shown an interest in hosting a second sensor station to extend CDC's reach.



Figure 2: Successful installation of the CDC sensor system (grey boxes at top of ladder)

### 5.1.2 Friends of Deptford Creek

The boating community along Deptford Creek is under great pressure as building developers continue construction work in the area. Moorings, storage areas and land access are increasingly under scrutiny as profitable areas to build upon. The residential boaters moored in the Theatre Arm area have had the yards adjoining their moorings cleared, prior to building development. SPC has attended the boaters' meetings, and MAZI conversations around DIY networking and how locally managed technologies might facilitate collective action continue with the group.

A MAZI toolkit deployment was introduced to enable the group to gather stories about their history of residency and boats, and to keep records of meetings. This reflects the group's interest in self-provisioning and data privacy, and their need to work collectively to resist their eviction from their moorings. In turn, this has contributed to the formal structuring of the boaters' group as a cooperative, and the use of open source tools as a shared working space. After some experimentation, they realised that they needed the service to be more widely accessed than in the specific hyperlocal offering provided by the MAZIzone, so the boaters decided to move to an open source platform, Sandstorm, hosted on SPC's servers. This includes the Etherpad collaborative writing tool and NextCloud shared document space (introduced to them on the MAZI toolkit), as alternatives to commercial offerings (e.g. Google tools).

One of the boaters is interested to help measure river conditions, and the Creeknet team is working on the goal of mounting a second 'CDC sensor system' on her boat to provide a second publishing beacon along the Creek to complement the unit at Creekside Discovery Centre. This is planned to be deployed in Spring 2019, an indication that the MAZI project activities will be sustained beyond the funded period. Preliminary to this work, SPC has commenced connecting the boater to the Creeknet mesh network via CDC, as part of the action to reinvigorate the Open Wireless Network.



Figure 3: Yards next to the residential boaters' moorings being cleared by developers

### 5.1.3 Musicians' promotion tool (Babar Luck and others)

Creeknet has worked with local musician Babar Luck to build a MAZIzone he can carry with him to promote his music and philosophy, and sell his products, while out and about performing. Babar pursues life as an independent musician with a DIY philosophy. Paul Clayton (SPC) has worked alongside Babar, initially through SPC's 'Wireless Wednesdays' and then in individual sessions. A long term co-design approach has been taken by Paul to understand Babar's goals and needs as a musician, gradually customising and adding content to his

portable MAZlzone, that he calls his 'Spaceship'. Babar is seeking a way to reach out to audiences and make a connection with them and share samples of his music and approach to life with the ambition that this might help lead to product sales as well as build his social network, which sustains him as an independent musician.

This collaboration has confirmed the importance of establishing participatory co-design processes for supporting engaged individuals who are not technology-oriented. It is important that the set-up and maintenance of a MAZlzone is accessible to a wide variety of participants with no prior experience of maintaining web based systems, and Paul brought his learnings from prior work with the MAZI UnMonastery pilot to the process (<http://www.soulchip.co.uk/training-mr-luck/>).

Babar's enthusiastic engagement with his MAZlzone and experience of taking it out on the road led Creeknet to invite him to share experiences with Central St. Martin's students, who had been exploring MAZlzones as virtual studios (reported below, Section 5.2.1). Both parties reflected on their respective experiences with MAZI and DIY networking. For the CSM students there was the additional value of finding out from Babar about the challenges of being an independent practicing artist and how self-publishing using MAZI tools helps that process.



*Figure 4: Babar performing to Central St. Martin's students, after exchanging reflections on MAZI use*

Babar's engagement with MAZI and his active participation in community events, including Deptford's annual local music festival, 'Party in the Park' (in which SPC members volunteer) has led to enquiries from other musicians for similar customised MAZlzones to promote their activities. SPC have therefore worked alongside a second musician, Patrick Lyons from the local band 'Fat White Family' to set up his MAZlzone for a similar purpose, and have had three more musicians' enquiries for customised MAZlzones since Summer 2018.



#### 5.1.4 Stowage Films

Gordon Cooper, a retired film maker, has documented the Deptford Creek area in photographs and film since the 1970s. Gordon is a long term participant in SPC's Wireless Wednesdays, and the MAZI-Mondays, and for the MAZI London cross-fertilisation event (Month 18) presented an exhibition of images and film to help illustrate the local context for Creeknet, and gave a short talk to attendees. The Creeknet team is working with Gordon to record his archive (Stowage Films) and to work with him to record these on a MAZIzone. Over 10,000 images have been so far digitised and the team are now moving to focus on his films. This work will be displayed at a gallery exhibition in Greenwich in Spring 2019.

#### 5.1.5 Protestors occupying local spaces

Creeknet has explored how MAZIzones might be used to give a voice to activists occupying local spaces. Groups may struggle to have their voice heard through mainstream media channels, and wish to self-publish to engage passers-by curious about what is happening to a place in their locality. With the increasing pace of gentrification in the Deptford Creek area, there has been resistance and direct action in response to developers closing spaces and preparing them for reuse. This unexpectedly came into focus for Creeknet when SPC's offices (part of Greenwich Borough Hall) were closed at short notice. Squatters moved into the building, and as well as communicating their action and concerns through posters on the building (for an example see Figure 5), asked Creeknet to give them a MAZIzone to enable digital publishing of their perspective to people passing by the building.

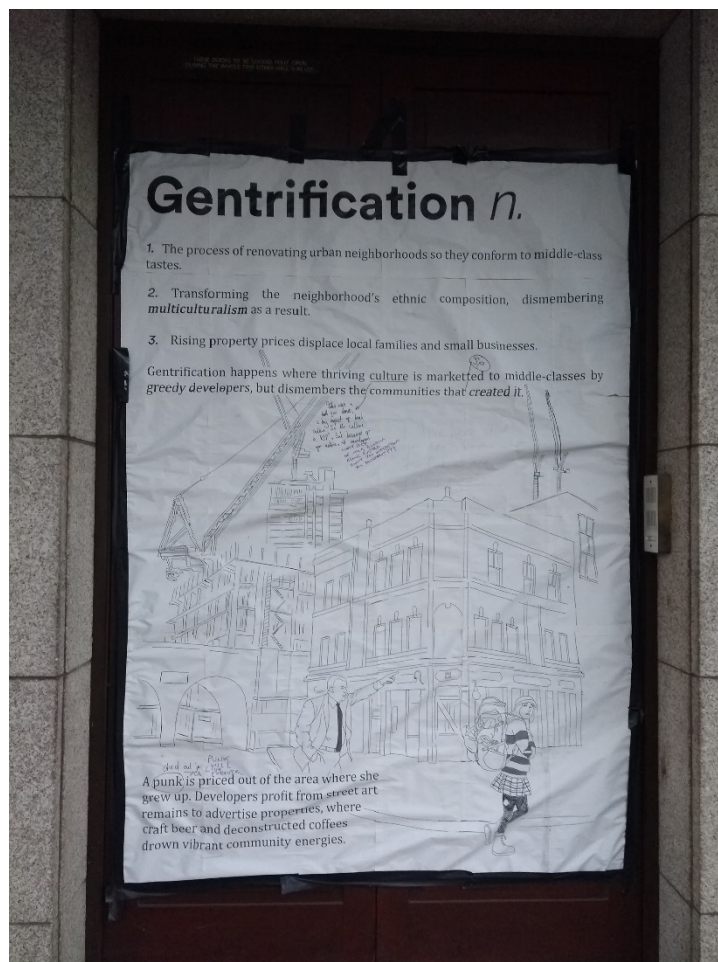


Figure 5: Occupation poster on Greenwich Borough Hall, formerly home to SPC

Elsewhere, a community green space, Tidemill Gardens (the grounds of a former school) has been fighting over the last few years to prevent its redevelopment. Community activists put forward a regeneration plan to assure its future as an urban green space, however, legal proceedings were not successful. A group of protesters occupied the site and sought to promote their perspective. James Stevens (SPC) worked with a local activist who wanted to encourage protesters to use a MAZIzone to coordinate their actions, promote their perspective to passers-by, and to act as a platform to encourage debate about the future of the Gardens. While the DIY philosophies align, initial engagement was not successful, with protesters resistant to the idea of using a MAZIzone. There was suspicion about the motivations of the MAZI team and concern about MAZI's funding. This emphasises the importance of developing social dialogue as a precursor to introducing technologies, and that we cannot assume MAZIzones will be enthusiastically taken up by all groups approached. However, the group was open to later conversations around recording images of the garden, and Central St. Martins later came and documented the space working alongside SPC members (more detail in Section 5.2.1 below).

### **5.1.6 SMASHfestUK**

SMASHFest (<http://smashfestuk.com/>) is an award winning science engagement festival for families that has in recent years held an annual event in Deptford. MAZI has been in conversation since 2016, exploring ways in which locally managed and run technologies might be used to evaluate activities. This year the MAZI team were invited to attend the event, and bring along a MAZI toolkit, with the Guestbook as a means of capturing visitor feedback on the event. The event for 2018 had the theme of floods, so SPC member and local artist Paul Clayton designed fold-up dazzle pattern boats for event visitors to construct and then display while they uploaded photos into a MAZI toolkit Guestbook.

### **5.1.7 Sensing the radio environment**

Two regular attendees of SPC's 'Wireless Wednesday' community technology drop in session have been working together to explore radio spectrum scanning, sensing what radio frequencies are being used around Deptford Creek. Through MAZI conversations, reflecting on the presence of wireless networks in their daily lives, residents have been made more aware of the WiFi and other radio activity around them. A number of participants in MAZI engagement sessions have noted their caution at the introduction of further radio emissions, and concern about what current radio activity is occurring. This group seeks to make visible what is present, and use this as a catalyst for conversation and community debate around the radio transmissions present in the Deptford Creek area, following the Creeknet theme of 'sensing the environment' and making the invisible, visible. The team is working on reporting their signal capture through reports in a local MAZIzone.

## **5.2 Wider activities**

We have also engaged with an extended range of community partners from a wider geographical range than the planned Deptford Creek area. These 'eddies of activity', work that takes us away from the immediate locality, but provide insights for the pilot and MAZI in general (water-based metaphors have been used as bridging linguistic tools throughout the pilot). These additional engagements were not originally planned to be within the scope of the Creeknet pilot, but we have identified suitable groups beyond the area and have been approached by others. We also believe that supporting this wider engagement and dissemination increases the likelihood of onward sustainability of the MAZI concept by building a critical mass of participants and a shared community of practice.

### **5.2.1 Central St. Martin's School of Art**

Following students' introduction to a MAZI through a workshop in the Autumn 2017 (reported in D2.5), and their setting up of a MAZIzone, 'Kimchi' (a Korean reference, playing with the metaphor that a MAZIzone is a place

where ideas can ferment), course leaders Elizabeth Wright and Anthony Davies decided to introduce all first and second year undergraduates on their 3D course to the MAZI toolkit.

Students were tasked with reflecting on their physical art studio space by learning about DIY networking from James Stevens (SPC), and then building MAZIZones and using these as alternatives for a number of days.

Studio practice is a cornerstone of design pedagogy, encouraging collaborative work that is peer critiqued, in semi-private settings. Tutors on the course had noticed that students increasingly arrive at art college with individualistic approaches to practice, which is compounded by the pressure on studio spaces and leads students to work away from the studio spaces often on their own. Central St. Martins is proud of its heritage of radical pedagogies, and the tutors were attracted to the potential of the MAZI philosophy and toolkit to stimulate collaboration and reflection around how virtual spaces might perform as studios, and as result, encourage critical reflection on what a studio might be.

Students worked in spaces across the college campus, developing content and customising four MAZIZones. After working in the MAZIZones, students were invited to return to their physical spaces and to reconfigure these for the purposes they felt were most important. At the conclusion of this activity, students were asked to present their ideas of redesigned studio spaces, and discuss how they had used the MAZIZones with the Creeknet team, who also brought musician Babar Luck (see Section 5.1.3) to encourage interaction between these different artists exploring the MAZIZones to support their practices.

Despite the stereotype of young people as ‘digital natives’, we found that not all students were confident with engaging with MAZIZones, which emphasises the importance of ensuring there are low barriers to participation, and surrounding social mechanisms and guidance for enabling peer support and shared learning. Equally though, some students were confident about independent onward explorations and a MAZIzone was set up to help support the organisation of cleaners at the art school in their fight for better working conditions (see Figure 6). This in turn has now led Central St. Martin’s to make contact with MayDay Rooms (see 5.2.5) which also hosts a group that seeks to help city cleaners organise, and the groups are now exchanging strategies.

This work emphasised the importance of the MAZIzone supporting multiple languages: a number of the cleaners were Spanish and Portuguese speakers. Furthermore, two of the activists from the ‘Reverso’ MAZI work in Sao Paulo favelas from 2017 visited Central St.Martins and met with Creeknet in December 2018, and sought advice on continuing MAZI use.



Figure 6: MAZI to support workers' organisation: Central St. Martin's cleaners with CSM student

Elizabeth Wright and Anthony Davies are also part of Central St. Martin's School of Art initiative to work within a local school's former craft space, documenting its previous use and collaborating with local artists. They will document the space, partly via photogrammetry, a method used in the CSM-MAZI visit to Sao Paulo favelas in 2017 (see D2.5). There is a current conversation around how these images and local conversations could be mediated via a MAZIzone in the space.

These CSM 'eddies of activity' have now come full circle towards the end of the MAZI project, with SPC inviting the CSM team and their photogrammetry approach to record the Tidemill Community Garden in the Autumn before its conversion to housing. Before the area was fenced off, the CSM team visited and made photographic recordings, working with SPC members to generate the resources for photogrammetric images. SPC have been invited to publish these on a MAZIzone in the vicinity of the now closed Garden that will be hosted by a local resident.

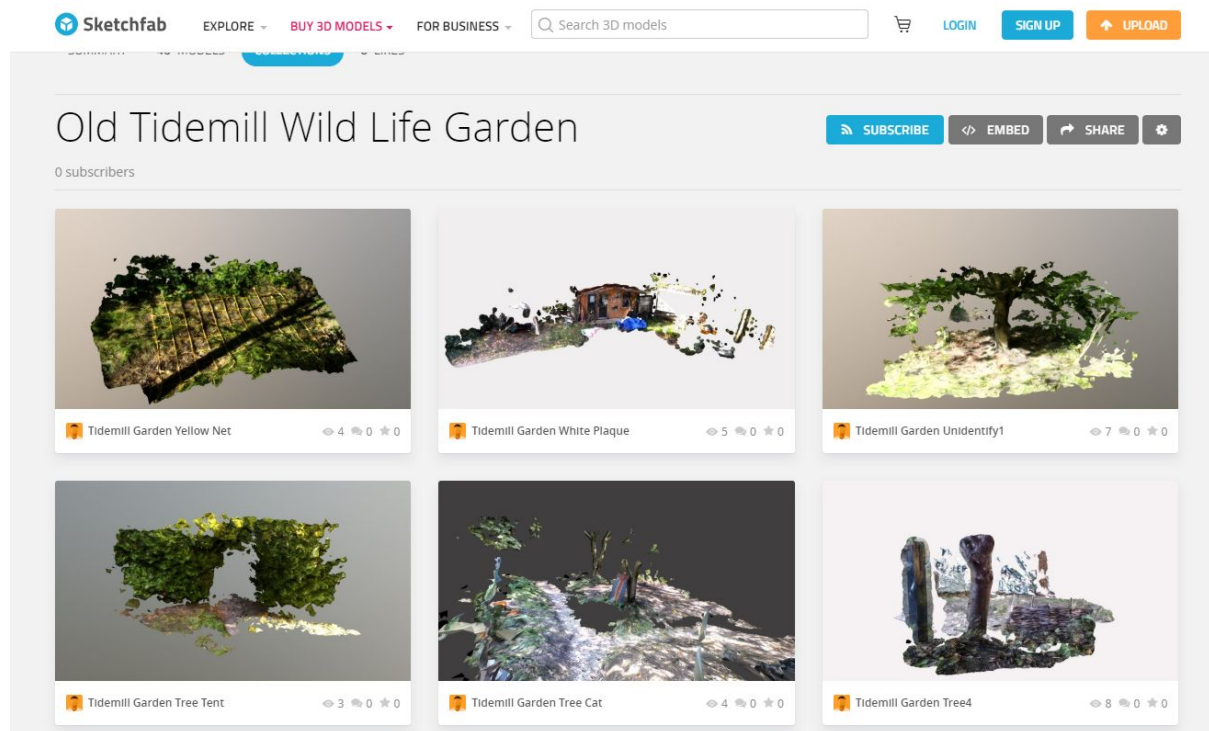


Figure 7: selection of photogrammetry images of Tidemill Gardens

## 5.2.2 MAZI Zambia ZEST project

The Open University (OU) has an International Development Office (IDO) that works on a range of projects supporting teacher education in developing countries. As educators in these countries increasingly have access to smartphones and networked technologies, but limited access to the internet, cellphone connectivity or mains electricity, the IDO is interested in tools that can enable knowledge sharing and networked learning in offline settings. IDO approached the OU team in Creeknet to explore how MAZI might support their projects after hearing about the project through a conference talk by the Creeknet team at the university.

As an initial pilot, the ZEST project, running teacher-training workshops in rural Zambia worked with the Creeknet team. ZEST is the 'Zambian Education School based Training' project, a programme between the OU, World Vision, the Scottish Government and the Zambian Ministry of Education to improve teacher training

(<http://www.open.ac.uk/about/international-development/projects-and-programmes/zest-zambian-education-school-based-training>).

The Creeknet team worked with the OU ZEST team to customise four MAZIzones to be taken out and trialled in Zambia in teacher workshops in August 2018. The MAZIzones were populated with ZEST teacher training digital



materials, the 'Teaching English in Sub-Saharan Africa Open Educational Resources library'. The MAZlzones would be used in the workshops to disseminate this content; to enable teachers to share their own resource; and to use the Guestbook as a means of introducing each other and share photos. Teachers travel from across a region to come to the workshops and the plan was to use the MAZlzones as hubs to facilitate the building of communities of practice.



*Figure 8: Teachers in Zambia using MAZI as part of the ZEST teacher education programme*

MAZlzones were successfully used, with the majority of participants successfully connecting via smartphones, contributing Guestbook posts, and downloading teacher training resources. For the Creeknet team, this was a success as the OU ZEST team were educators and not technical experts. The educators reported that they'd successfully incorporated the MAZlzones into the workshops, and resolved teacher issues arising (mostly providing advice on how to connect using a wide range of smartphones and laptops). This was an innovative mechanism for investigating how OU teacher educators might deliver rich digital / online training content and build professional communities of practice in an offline setting in schools in Zambia. Until now the ZEST team has distributed paper copies of the training materials, and apart from resolving the physical challenge this involves, moving to digital dissemination will enable further onward sharing by the workshop participants. An unexpected benefit was that one participant who shared a visual impairment found it easier to look at the digital materials via MAZI even when the workshop moved on to an activity exploring the print version of the teaching materials. Introducing activities on MAZlzones also enabled the ZEST team to understand existing levels of digital access and competency amongst this new group of teachers in the specific context, and the Guestbook, used as an 'ice-breaker activity' was well received as a novel means of the teachers introducing each other: over 100 posts were made including 70 photographs (see Figure 9 for examples).

Based on the success of their first experience, the ZEST team worked with the Creeknet team to configure a further set of MAZIZones to a second set of teacher workshops in Zambia in December 2018, following the same model of use. This time, the intention is to leave MAZIZones with identified local champions in order to begin the process of local Zambian educators owning and maintaining the systems for their own longer term use. Copies of the MAZI eBook (D4.8) and technical guide have been sent along with the MAZIZones, and the Creeknet team will work with educators to consider how the broader MAZI approach to introducing DIY networking can be synthesised with the OU's approach to introducing digital education in this setting. At the time of writing, this visit is still underway and a debriefing and future planning session has been scheduled for their return in January 2019.

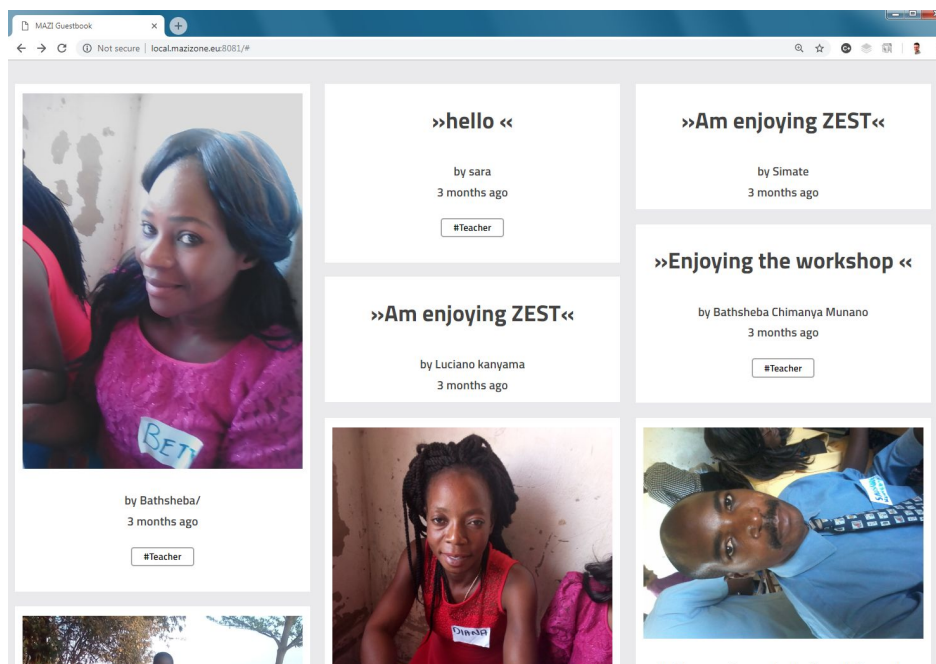


Figure 9: teacher posts on MAZI Guestbook at Zambia teacher training workshop

### 5.2.3 La Cambre School of Art, Brussels

Printmakers at the La Cambre School of Art, Brussels have discovered a partial map of the colonial Congo, on a broken lithographic plate in the wall of their campus, bordering the Belgian national military cartographic institute (see: <http://wrd.spc.org/faultline/>). This led to the idea of capturing stories around the map, and to reflect on Belgium's colonial past. The Creeknet team was approached by a teacher of typography, Pierre Huyghebaert, to introduce MAZI and DIY networking as an approach and as an archiving tool for an artist recording events and stories as they walked along the line of the map in modern Democratic Republic of Congo and the Republic of Congo. The Creeknet team visited La Cambre in February 2018 and introduced MAZI tools and DIY networking concepts to print tutors and students.



Figure 10: the broken lithographic plate: the fault as a route to be travelled and recorded

MAZI was also introduced to the undergraduate printmaking students as a means of autonomous sharing work and reflections in the studio, and as a mechanism for storing and reflecting on typography (the printmakers have a strong interest in open source typography). At the time of writing, political instability in the DRC has prevented the artist from commencing their walk across the Congo, but the MAZI studio tool is *“heavily used by a module mainly held out of school with 25 students of different backgrounds”* (Pierre Huyghebaert). The mobility offered by the MAZIzone by being battery powered and hence autonomous from mains power as well as the internet is specifically mentioned as a reason for its success. This teacher is as a result now exploring other DIY networking tools, including ‘Networks of Ones Own’ <https://networksofonesown.constantvzw.org/etherbox/manual.html>, another assemblage of open source tools on a Raspberry Pi, that explicitly considers self replication of code and content. This echoes the group’s strong philosophical interest in autonomy over the means of digital production and publishing, and their ongoing interest in engaging with MAZI as a representative of the DIY networking community.

#### 5.2.4 Science Made Simple

Science Made Simple (<http://www.sciencemadesimple.co.uk/>) is a UK based public engagement company that holds events to excite and educate the public about science. They asked the Creeknet team if MAZI could offer novel ways of engaging an audience that increasingly has access to smartphones, and find lightweight and entertaining ways of gathering evaluation data. Often the Science Made Simple team present an event in a place where they cannot be sure of getting internet access, so cannot ask participants to visit a website to complete an activity. A MAZIzone, providing offline networked services was seen as offering an ideal tool for gathering participant feedback that could be managed by a presenter independent of the networking constraints found when working in unknown locations.

After discussion (Summer 2018) it was agreed that the Creeknet team would configure a MAZIzone to support their ‘Mars Landing’ show. In this show, the family audience learns about Martian geology, and how to spot features from orbital photos. To evaluate whether audiences had engaged with the talk, the MAZIzone would be set up with two instances of the Guestbook, each with custom photos of the Mars surface. The first Guestbook instance would be presented as the audience came in, and as a warm-up exercise (pre-talk) the audience would



be asked to post a comment on where a good landing site for a spaceship would be. This would also give early arrivers something to do and discuss before the event started. At the end of the event, the presenter would ask the audience to look at the second Guestbook, with another image of the Mars surface, and ask the same question. This would gently test whether the audience had learned how to interpret surface features as a result of listening to the talk, and gather other peripheral feedback. ScienceMadeSimple has identified that it has been difficult to gather evaluation feedback (paper surveys are seen as boring and have low response rates) and involving technology as part of the show is seen as suitable (many audience members have smartphones) and likely to be more engaging. At the time of writing, this MAZIzone has been configured and is being tested by the Science Made Simple team, and will be used for the first time in January 2019.

### 5.2.5 MayDay Rooms and 56a InfoShop

Rosemary Grennan, the archivist from MayDay Rooms, has been running a MAZIzone to record radical activist archives since 2017 (reported in D2.5) and has introduced Creeknet to the idea of adapting MAZIzones as autonomous archiving tools, including the inclusion of specific open source archive software. She has since been approached by the London radical social centre '56a InfoShop' to help archive their resources. 56a InfoShop describes itself as "a long-term volunteer-run, 100% unfunded, DIY social centre" (<http://56a.org.uk/>). It has a large collection of resources to support practical action and political reflection on "(trans)feminism, anti-colonialism, anti-globalisation, environmentalism, squatting, anti-fascism, No Borders, queer politics/ organising, anarchism, situationism, autonomism, anti-civilisation, anti-capitalism, radical pedagogy, diy, bikes, self-care, cooperatives, permaculture, consensus organising, and loads loads more" (from the website). From her introduction to MAZI, Rosemary has begun (December 2018) to independently engage with the group and introduce them to archiving via a MAZIzone to help them make their collection more accessible to visitors, as well as increase their digital capabilities (James SPC describes them as "totally tech phobic"). In common with the approach taken when collaborating with Babar Luck, this emphasises the importance of an engagement approach which reaches beyond just technical introduction to software tools. Rather, it shows the value of a broader conversation around the parallels between DIY networking and how this resonates with the group's self-provisioning, DIY and autonomous practices, and how these might also be reflected in how they engage with archiving and the use of network technologies in their work. The first hands-on working session has been a success, with Rosemary reporting that she will be using MAZI for all future scanathons and digitising workshops.

### 5.2.6 Widening impact events

An opportunity arose in Year 3 to extend MAZI dissemination in the Creeknet pilot through Open University funding. This funding was intended to maximise the impact of research work carried out by the university, and the MAZI team was identified as a successful research project to be supported. This allowed the Creeknet team to run an outreach event and a follow-up meeting, to introduce MAZI concepts and tools to a wider group of participants.

We identified a number of potential interested researchers and activists across the UK that had either shown prior interest in MAZI, or who had a history of exploring community led technologies and DIY approaches to help overcome local sustainability challenges. These included community based artists, makerspace tutors and community media researchers working in a number of countries. Seventeen people attended a day-long workshop at the Creekside Discovery Centre on the 30th July 2018, along with existing Creeknet participants from CDC and Central St. Martins, and also Katalin Hausel from the UnMonastery team (MAZI Pilot 4). Katalin ran a 'pre-tech' design session using the same methods she had introduced to the Creeknet pilot team at the Edinburgh 'DataFest' event hosted by Napier in February 2018 (see Section 5.3 below).





*Figure 11: Creeknet team introducing participants to MAZI*

Participants were introduced to MAZI, discussed their interests and contexts, and reflected on their potential uses for MAZIs in their work. Katalin's design exercise both enabled participants to articulate their situations, and act as a catalyst for discussion (the majority of participants did not know each other). CDC introduced their participation in MAZI, and explained how it is changing their engagement with local schools and communities. Attendees had a hands-on session working with MAZI toolkits, and were given the opportunity to take away Raspberry Pi's and MAZIZones SD card images to explore in their own practices: six took up Raspberry Pi's configures as MAZIZones, and a further 4 took MAZIZone images on SD cards.

The output of the workshop sessions were analysed, and Figure 12 describes a summary of the contexts, mechanisms and outcomes participants imagined a MAZIZone might support, and also the challenges they'd anticipate facing if they attempted a deployment.

## CONTEXTS

\* Education; \* Novelty; \* Taking control; \* Education technology; \* Learning together; \* Ownership; \* Versatility; \* Independence; \* Empowerment; \* Ethnography; \* Security; \* Freedom; \* Engaging youth/kids; \* Sharing interdisciplinary Knowledge; \* Enabling visitors to become contributors; \* Sharing stories; \* Synthesising learning theories with the practice of knowledge sharing; \* Empowering and giving the community a voice

## MECHANISMS

\* Book sprint; \* Off-MAZI decision sessions; \* Archives of Etherpads; \* Meeting on a MAZI zone; \* Scenario building; \* Diary archives; \* Evaluation using photos, interviews, surveys, comments, snaps, videos, guestbook; \* Quizzes to compliment a walkshop; \* Collection of offline data and publication of stories; \* Publics collecting and sharing their own data at pop-up and walk-in clinics; \* Participatory learning workshops; \* Community-based partnership research; \* Needs assessment; \* Asset management; Community profiling; \* Facilitating network building through dialogue and info/knowledge sharing; \* Partnering with existing venues and projects

## OUTCOMES

\* Safe space for sharing; \* Website in a secluded spot; \* self-curated documentation; \* Diverse points of view; \* Understanding of where visitors interests lie; \* Network capacity where Internet isn't desirable or accessible; \* Stories of engagement; \* Evidence of engagement and impacts for funders; \* Value of initiatives; \* Self-evaluation to help improve procedures; \* Connecting with loved ones whilst living in the middle of nowhere; \* Learning at the pace of the learner; \* Maintenance of learning records; \* Improving field-based walk & talk learning; \* Increasing community awareness of local natural histories in context; \* Increased sense of community; \* Ownership of health data and engagement with research and health services; \* Community radio station; \* Capacity and capability building in communities; \* Collection and curation of oral histories in rural communities

## CHALLENGES

- How do you get communities to engage with a MAZI zone?
- How do you overcome the obstacle of digital literacy in terms of participants limited understanding of technology and purpose? How can we simplify access thresholds to overcome knowledge assumptions?
- How do we convey the benefits? Why MAZI and not something else?
- How do communities take ownership?

*Figure 12: Analysis of Contexts, Mechanisms, Outcomes and Challenges for deploying a MAZIzone identified by the workshop participants.*

A follow up half-day workshop was held at Central St. Martins School of Art in September 2018, when six of the original participants attended, shared their experience of using a MAZIzone in the intervening time, and discussed possible routes for onward development and funding of collaborations. These events have led to continued conversations and initial bid planning, including Proboscis (who host the bookleeter DIY publishing system used in the Creeknet London Cross Fertilisation event (described in D2.5); Marc Garrett (from the Furtherfield art gallery based in a London park ("*connecting* people to new ideas, critical thinking and imaginative possibilities for art, technology and the world around us" <https://www.furtherfield.org/>); Central St. Martins, and Andrea Berardi of the Cobra Collective ( <http://www.cobracollective.org/>, an NGO supporting community owned solutions to sustainability challenges). Peter Day, of the University of Brighton took a MAZIzone from the event to a community media project in Kenya to explore how a MAZI toolkit might be used to support community radio broadcasting in rural area. This action has led to links with the EU supported community radio projects RootIO Radio ( <http://www.rootio.org> ), and Grassroots Wavelengths (<https://capssi.eu/caps-projects/grassroots-wavelengths/>) that the MAZI consortium learned about at the MAZI project meeting in Volos, July 2018.

The event has led to conversation around future collaborations and funding between Creeknet, Central St. Martins, Cobra Collective; and also created another link with Common Grounds (MAZI partner), bridged by event attendees Giles of Proboscis, who attended MAZI events organised by MAZI partner Common Grounds at the Berlin Urbanize! Festival (<https://berlin.urbanize.at/>) and identified shared themes.

### 5.3 Additional outreach and networking building

In 2018, the Creeknet team has also introduced MAZI at a range of additional outreach and network building events.

- “Program or Be Programmed” was a hands-on introduction to DIY networking workshop at DataFest18 (<https://www.datafest.global/>) in Edinburgh (February 2018) held at CodeBase, run as a collaboration between Napier University, UnMonastery, and Creeknet (SPC and Open University). The teams brought together MAZI pilots’ methods for running DIY networking engagement workshops, and synthesised these approaches for this public engagement event. We introduced an audience to the MAZI project, used UnMonastery’s MAZI design canvas to help participants map community scenarios, used the Berlin pilot’s ‘unboxing’ method to introduce participants to hardware, and helped the audience to set-up and configure their own MAZI zones to take away. During the day, participants were encouraged to pin up reflections about the toolkit, including challenges they’d found, which were then summarised and fed back to the technical development team (UTH) to inform future iterations of the MAZI toolkit.

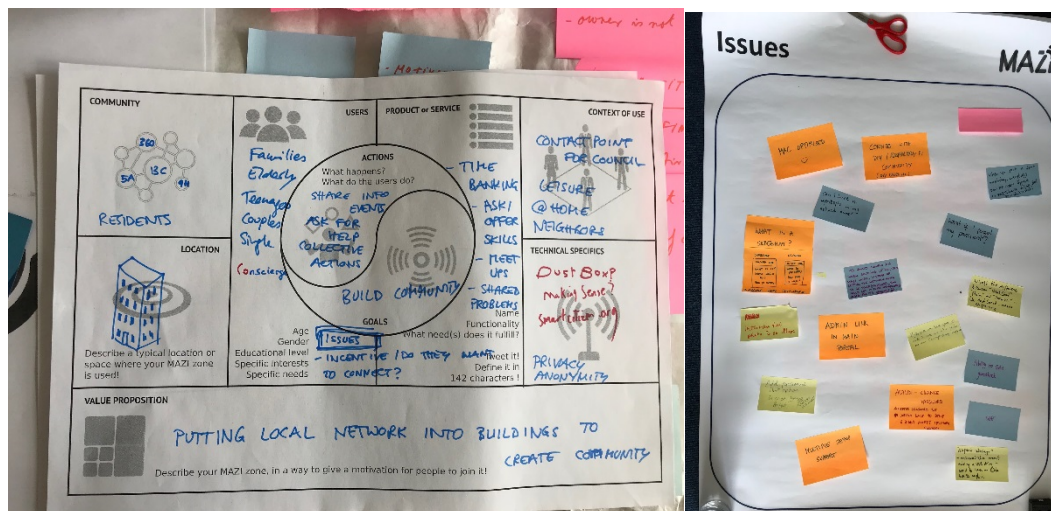


Figure 13a and 13b: Completed UnMonastery originated MAZI design canvas, and feedback poster

- SPC, in its role as participant in the ‘Doomsday Blockchain’ project commissioned as part of Collusion arts funding, UK (<http://www.collusion.org.uk/commissions>), introduced the MAZI toolkit while on a train as a note taking device for this project’s meetings and showed the use of collaborative authoring tools, emphasising the value of autonomous, offline networks.
- Mark Gaved (OU) presented MAZI at an Open University hosted Technology Enhanced Learning conference, titled “Networked learning beyond the internet: the MAZI experiences”.
- Gareth Davies (OU) and James Stevens (SPC) from Creeknet, along with Katalin Hausel (UM) presented a paper at the British Conference of Autoethnography (Bristol, 23-24 July 2018) describing the challenges for MAZI community embedded partners negotiating their roles as both neighbourhood activists and EU funded researchers (title: “Community partners acting as insider researchers to facilitate Do-It-Yourself networking”).
- Demonstration to Raspberry Pi Foundation at OU, September 2018. The Creeknet team demonstrated the MAZI toolkit at an Open University hosted maker-event promoting OU Raspberry Pi focused projects to the public and university staff members: (<http://www.open.ac.uk/blogs/MAZI/?p=118>). The special guest at the event was Phil Colligan, CEO of the Raspberry Pi Foundation, who later described MAZI as ‘one of the top 5 world changing Raspberry Pi projects for good’ in the official Raspberry Pi magazine (November 2018, p.20



<https://www.raspberrypi.org/magpi-issues/MagPI75.pdf> ), noting he'd been made aware of the MAZI project through attendance at this event.



Figure 14: MAZI selected as 'top 5 world changing projects for good'

- SPC helped run a MAZI workshop in Edinburgh to artists, as part of UnMonastery's activities at the Muirhouse IR11 art studios (<http://www.ir11.org.uk/>) on 13th and 15th October 2018. The artists were interested in how MAZI might be used as a virtual gallery (for details, see D2.12,) and James and Paul (SPC) were able to cross-fertilise the Creeknet experiences from Central St. Martin's and La Cambre schools of art, as well as their Creeknet and Unmonastery experiences of introducing the MAZI concepts around DIY networking and eliciting community needs in non-technical settings. Participants from these events then joined in the MAZI Edinburgh workshops in Summerhall, with one then contributing to the MAZI toolkit email lists and joining the technical MAZI community. Conversations with one participant, Chris Collier, an expert in psychogeography and previous conversations between Creeknet and the Open College of the Arts (<https://www.oqa.ac.uk/>) have led to Creeknet researching how a MAZIzone might record local journeys, combining time lapse photography and GPS traces.
- The Creeknet team led hand-on workshops in Edinburgh as part of the final Napier University hosted MAZI cross fertilisation event (16-17 October 2018), along with other MAZI partners. Drawing on experience gained previously (e.g. Creeknet engagement events, DataFest2018) and using tools and methods previously deployed, the Creeknet team led the hands-on MAZI toolkit sessions, taking participants from an introduction to MAZI, unboxing (with Elizabeth of Common Grounds), design canvas (led by Katalin and Lauren of UnMonastery) and helping participants configure their own MAZIzone (with Giannis of University of Thessaly).
- Creeknet has introduced the MAZI project to Andrea Berardi, of the Cobra Collective, as a result of a presentation at the Open University, and his attendance at the widening impact events. Dr. Berardi's work focuses on rural Guyana, and he has written MAZI into two funding bids (Autumn 2018) for future projects. He has since demonstrated MAZI at the 'Urban Forest Gardening' conference September 2018 hosted by the UK National Forest Gardening Scheme (<http://nationalforestgardening.org/>), as part of his talk: "Captivating technology to engage young people in particular, and to spread the planting of forest gardens", and this has led to Creeknet's introduction to this further community of researchers and activists.

## 6 Evaluation and outcomes

In three years, the Creeknet pilot has engaged with over 25 organisations, and deployed MAZIzones with 21 different groups and individuals both in the Deptford Creek area and internationally. The Description of Work identified that four important variables defined and to be explored in each pilot were: Context, Purpose, Actors, and Duration: these have been reflected in the reporting of each community engagement.

The Creeknet pilot identified that we would draw from Kirkpatrick's evaluation model for training (1994), as a mechanism for evaluating outcomes from the MAZI pilot. This asks educators to consider what reactions, learning, behaviour change, and results have come about as a result of their engagement in a learning intervention. To adapt Simpson et al.'s (2017) questions, we can see that throughout the project and reported in D2.4, D2.5, and D2.6, we have reflected on the following:

1. Reactions: Did people engage with MAZI and Creeknet? How relevant did they think it was? How satisfied are they with it?
2. Learning: What knowledge or skills have those involved learned from the pilot? Have there been changes in attitude, confidence or commitment as a result of the pilot?
3. Behaviour: What changes in behaviour have occurred as a result of the pilot?
4. Results: What impacts (benefits or changes) has the pilot had on the wider world regarding those with which the communities interact?

In each Creeknet deliverable (D2.4, D2.5, and D2.6) we have identified deployments in tables (e.g. Section 5.1 in this deliverable), and then described activities in more detail by each engagement, identifying reactions, learning, and where evidenced, behaviour changes and results. In Appendix A we describe the total list of communities engaged and identify: the engaged community; whether a MAZIzone was deployed; the level of engagement; and what changes we have seen.

*Reactions* have been recorded throughout the project through face to face engagement, observations, focus groups, and interviews. These include the desire to participate; responses to discussions around DIY networking and impressions of the MAZI toolkit, both initially and through use. In the Creeknet deliverables we have identified which local groups engaged with MAZI and Creeknet, and the Creeknet team has used participant reactions as a mechanism for providing feedback to the consortium and the technical team to direct further development.

*Learning* can be interpreted in a number of ways and the reviewers at the First Review (July 2017, Volos) asked for reporting on 'cognitive, relational, normative, operational change in the communities', all of which might be described as types of learning. Evidence has been gathered through observation and interviews, both self-reporting by participants and observation by the Creeknet team of changes seen. These have been summarised in Appendix A for each group, and reported in each Creeknet deliverable at that snapshot in time. Working in the Deptford Creek community context, it has not been appropriate to test 'learning' as formally as in a more structured educational or professional setting (e.g. a pre- and post- test, control group). We also recognise that some learning might not be evidenced within the time frame of the project or even recognised by participants until a later time.

*Behaviour* changes in Creeknet's case may reflect changed norms, or organisational practice, or changed social networks. We have identified changes, collecting evidence through observations and informal interviews and participating alongside groups in their practice (e.g. attending their meetings). MAZI-Mondays and other face to face sessions have enabled us to follow groups and individuals' engagement and experiences with DIY networking and the MAZI toolkit, and we have observed groups exploring new practices and trying out new tools as a result. For example, the 56aInfoShop were identified by James (SPC) as 'tech phobic' but have since begun to adopt MAZIs and digital technologies to scan and catalogue their archive; and the Friends of Deptford Creek have seen the value in recording their meetings using open source tools (SPC's Sandstorm server) and formalising their loose-knit residential community into a formally constituted collective. Creeknet engagement has also brought together different groups that are geographically proximate but differ widely in interests and focus, and we have seen interactions and the building of social relationships as a result of MAZI activities.

*Results* of MAZI actions, like learning and behaviour change, can be both witnessed already but may also take time to reveal themselves. At its simplest, we can see groups continuing to engage with MAZI over three years, and showing ongoing and repeated use of MAZI tools or more generally DIY networking. We can see evidence of changing practices around networking technologies (for example digital archiving, virtual studios, and self-publishing and promotion by musicians), and social networks extended as the result of participation. For SPC, this has invigorated interactions around the Open Wireless Network: James suggested that he expects that next year (2019) *“the phone will ring off its hook”* as he is increasingly being asked to support current and new MAZI deployments, and the Open University team has commitments in 2019 to introduce and trial MAZI in a number of university related educational settings (e.g. international development projects). A concrete outcome has been the number of groups independently approaching the Creeknet team requesting demonstrations and deployments on the basis of positive reports by groups already engaged, and evidence of existing MAZI-engaged groups independently engaging others in their network with the MAZI concept and tools.

In the Creeknet pilot we have engaged with a wide range of community groups and individuals and have continued to provide feedback to the iterative development of the MAZI toolkit. Outreach and cross-fertilisation events have resulted in interactions between a range of MAZI partners and dissemination of MAZI to an international audience. Increasing recognition of the work has led to more requests for the Creeknet team to talk to new groups about DIY networking and set up additional MAZIzones, some for previously unimagined purposes, which have in turn provided additional insights to both discourse around DIY networking and technical requirements for future MAZI toolkit iterations. In the following subsections we reflect on the Creeknet outcomes and discuss emerging key themes across the duration of the project.

## 6.1 Discursive engagement with DIY networking

The Berlin pilot’s framework for DIY networking (Deliverable 2.2, Section 2.2) identifies the importance of building discourses, social practices and social relationships in the trajectory towards the development of a MAZI platform. In Creeknet, community engagement activities have created a space for discourse and reflection as well as introducing groups to the MAZI toolkit. ‘Do it yourself’ as a self-empowerment approach is broadly understood and practiced in the Creeknet locality, and MAZI is an entry point to discussion around how this might be played out in the digital sphere. MAZI has enabled debates around how people wish to engage with networks, for what purpose and how they believe their data to be managed. For many participants, interactions with the internet and online tools are so abstract that they appear beyond control. MAZI in this sense is a ‘triangulator’ - a mechanism to better understand concerns, and possibilities.

Some of the most fruitful conversations have been around, as well as within, the MAZI toolkit. Information exchanges, knowledge sharing, and contacts have been made across groups and strengthened social networks as a result of MAZI activities but not always made explicit within the MAZIzone software tools themselves. For example, through the MAZI-Monday regular meetings, geographically proximate organisations Creekside Discovery Centre and the Minesweeper Collective met for the first time, and have turned the sad situation of the burning out of the Minesweeper boat into a positive potential future collaborative action: its reuse as an artificial reef to support maritime life. SPC has taken a systematic approach to hosting MAZI-Mondays in community spaces along the length of Deptford Creek. This has encouraged groups with very different interests to come together and meet in spaces they’d not previously visited (e.g. the Stephen Lawrence Centre), and activated community action around both physical and digital spaces (the Hoy Cafe meetings leading to shared population of the Hoy Cafe MAZIzone, and also the environmental clearing of the Hoy Steps to provide better access to Deptford Creek). Debate at MAZI-Mondays has led to both knowledge sharing and take up of MAZIzones, but also encouraged use of other open source and self-managed networked tools (e.g. Friends of Brookmill Park exploring WordPress for self-publishing, Friends of Deptford Creek keeping records through SPC’s Sandstorm server). We would argue that this provides evidence that a heterogeneity of tools and of practices can flourish in the DIY networking sphere.

MAZI has shown the critical importance of building trust and engaging communities in the broader discourse around DIY networking before introducing technologies. For example, the Tidemill Gardens activists were suspicious of the Creeknet team’s offering of free technologies and rejected the use of a MAZIzone, while the Friends of Deptford Creek, through SPC’s attendance at their collective meetings, and subsequent conversations,

have since begun to use networked tools in their organisational processes. Methods for engaging participants in discourse around DIY networking have been shared across MAZI pilots through cross fertilisation events, and brought in to Creeknet enriching our approaches. Discursive reflections have been reported back to the WP4 team, summarised in the eBook (Deliverable 4.8) and recorded in the shared consortium space (<http://demo.mazizone.eu:9001/p/mazizone-stories>).

## 6.2 Use and usability of the MAZI toolkit

Given James Stevens position as a community networker in Deptford, it was expected that Creeknet would emphasise practical engagements and deployments of MAZI in diverse neighbourhood settings. There has been a Creeknet focus on *“sensitising the technical team to the problems that revealed themselves ‘on the ground’”* (Katalin, UnMonastery), reporting challenges and suggesting routes forwards. Creeknet has been an active participant on the MAZI consortium feedback channels to the WP1 technical team, both reporting on observations from the participatory approach to deployment, and also from the team’s own experimentation as new versions of the toolkit have been released.

The successful adoption by a number of groups has indicated that the MAZI toolkit has been suitable for a number of scenarios, and there has been ongoing interest (e.g. continuing engagement by Karen Barnes, independent use by La Cambre, further exploration of scenarios by Central St. Martins, promotion of MAZI to 56a InfoShop by MayDayRooms). This suggests the MAZI toolkit has reached a level of maturity that will enable onward sustainability and that the toolkit is usable for a range of participants (*“my mother could use this”*: Leanne, Science Made Simple, in a hands-on training session, November 2018).

A key challenge has been managing the iterative development of the software throughout the project. Creeknet has offered the MAZI toolkit to neighbourhood groups emphasising its application as a practical tool to address community challenges, rather than as a prototype for experimentation and reflection. This has meant introducing versions-in-progress, and supporting community groups in their upgrade to newer versions. It has clarified the importance of enabling the easy back up of content, and customisations committed to existing deployments of MAZIZones. In some cases this process has been a stumbling block for continuing participation by groups (e.g. Undercurrents Gallery). Content must be easily saved and restored, and the process must be swift, to enable backing up in temporary or uncertain situations (for example, in the Sao Paulo favelas, or by activists temporarily occupying spaces). The process has become easier during the duration of the project, and it is clear that as groups not only use MAZIZones for short term usage, but also begin to commit effort and valuable community assets, ensuring this process is both swift and easy for participants without technical expertise becomes of critical importance.

We are seeing the emergence of themed MAZIZones, e.g. for musicians’ self-promotion, for archives, or as virtual studios. Customised MAZI toolkit configurations themselves have value as artefacts to be exchanged or forked in turn by others and Creeknet has been active in encouraging the development of mechanisms to ease this process, seeing it as a core component to onward sustainability of the MAZI concept. The Creeknet pilot has played an active role in driving this work within the MAZI consortium by providing feedback, and building a relationships with a leading distributor of Raspberry Pi images, the Berryboot repository (<https://berryboot.alexgoldcheidt.com/>), which has now seen over 900 downloads of MAZI by December 2018. At the end of the project, we can now see initial independent explorations, for example the La Cambre printmakers investigating both MAZI and NetworksOfOnesOwn as mechanisms for self-replicating both software images and constituent content, showing their broader interest in self-provisioning as an act of autonomy and radically questioning the relationship between digital tools, practices, and content.

Language support became an important issue for Creeknet with our commitment to the Reverso work (Sao Paulo favelas) and has continued as a live topic in Year 3, as the Creeknet team has been asked to collaborate in potential MAZI deployments internationally and with speakers of multiple languages in the UK (e.g. the Central St. Martins’ cleaners, reported in Section 5.2.1). We have had periodic contact with a community activist in Brazil (Chus Eto, working in indigenous communities) and the use of TranslateWiki with its ability to enable community sourced translations without coding expertise has been a powerful tool for encouraging wider uptake. Creeknet deployments have identified the importance of enabling easy translation processes for the MAZI toolkit.

Some of the simpler MAZI offerings have attracted the strongest positive responses. A robust system with a selection of easy to use and administer tools is an attraction in itself, particularly for circumstances where easy access to the internet cannot be assured. Simple web based tools have been well received, particularly those that are already known (such as WordPress) or have web-based parallels (such as Nextcloud, which has similarities with Dropbox; or Etherpad, which overlaps with Google Docs). As Katalin (UnMonastery) has noted, the Creeknet, Berlin, and Zurich pilots can be said to be operating in “*post-internet environments*” where we can generally assume the people with which we engage will be familiar with commercial web offerings and ways of working, so the introduction to MAZI toolkits often builds upon familiarity with interacting with web interfaces.

### 6.3 Enabling appropriation

A wealth of possible usages have been suggested for MAZIzones by community organisations and individuals. Deployments of MAZIzones have resulted in the existing tools being used for unexpected purposes, and in a number of cases we have been asked for additional functionalities, settings, or tools. For example, SPC supported students at Central St. Martins interest in developing narratives by adding the Twine storytelling application to a MAZIzone (<https://twinery.org/>). Creeknet engagements have shown the importance for mechanisms for adaptation and appropriation, including customising current tools, and implementing additional tools.

We have already seen a range of unexpected adaptations, e.g.

- External environmental sensors recording to a MAZIzone and surfaced in MAZI visualisations (Creekside Discovery Centre)
- Guestbook as an evaluation tool for public events (Science Made Simple)
- MAZI as a media store: gallery events, musicians’ self-promotion tool (Undercurrents Gallery, Babar Luck)
- MAZI as an archive tool (MayDayRooms, 56aInfoShop, Stowage films)
- Photogrammetry as a means of community recording: (Central St. Martins, Reverso)

### 6.4 Understanding DIY: capacity, appetite, and trust

MAZI’s Description of Work declares the project’s ambition to support the deployment of ‘local communication networks that can operate independently from the Internet, owned and controlled by local actors’. Creeknet’s engagements with community based groups have provided valuable insights into the extent to which we might expect the general public to ‘do MAZI themselves’.

Many groups and individuals with which we have contacted are already open to the ideals of self-provisioning (‘DIY Culture’) and in most cases undertake DIY practices, whether for example maintaining their own boat as a place of residence, collectively organising as a volunteer group to look after the local park, or working as independent artists. The majority of individuals we approached owned their own mobile networked devices (predominantly smartphones and also laptops), and had some experience in their maintenance. The majority were aware of wider debates about data privacy and digital ownership. We could therefore say that the groups we approached were already sensitised to the idea of exploring local ownership and control of networked communication services.

Our goal was for a full participatory process alongside these groups, leading to fully autonomous self-management of MAZIzones by as many as possible and creating a social network to provide peer support. In many cases fully independent self-management has not been achieved though we have clear evidence of developing social networks sharing practice. We have had to temper our ambitions, and ensure suitable focus on providing appropriate support, and nurturing appropriate support structures. We have realised this through the continuing regular community based meetings to provide skills training; participation in MAZI-wide documentation and feedback processes to ensure there is suitable guidance and recognition where systems must be improved to enable easier usage; and through encouraging social networking across Creeknet groups to build communities of practice (e.g. introducing Central St. Martins to Babar Luck; inviting both active Creeknet partners and new groups to the Outreach events).



In practical terms, the participatory process was adopted depending on local circumstances. In the MAZI Zambia ZEST project, for example, the Creeknet team identified that the co-design process would be managed, rather than expecting full participation of all parties throughout. Here, it was enacted through (a) initial conversations with the participants to understand the users requirements and needs (b) configuration working alongside a chosen champion and then (c) deployment to the broader team with a simpler ‘tutor guide’ that provided guidance on how to start and maintain an existing deployment, with guidance of how to gain expert MAZI support.

Creeknet has reflected on the challenges to participation for groups; these may be because of technical issues (lack of expertise, or tools not usable enough) or the capacity to participate (time, resources, barriers that prevent groups from reaching out to others for support). James (SPC) introduced the OU and the wider MAZI consortium to the term ‘appetite’, recognising that beyond capacity and aptitudes, participants need to have a desire to participate. This echoes the Technology Acceptance Model, which considers not only the perceived ease of use of a tool, but also its perceived usefulness (eg. Davis 1989; Venkatash et al. 2003).

Furthermore, this hints at consideration of trust and how this might act as a lens when considering ‘appetite’ to engage with the MAZI concept and consortium. Edwards et al. (2018) distinguish between the layers of trust that potential participants require in adopting a new technology: trust in the ‘institution’ (in our case, the MAZI pilot team); trust in the tools (do the tools do what they claim to do?); trust in the deployment of the tools (are the tools used transparently or covertly?); trust in the use of the data that is collected (will data be used only as agreed and intended?); and trust in the outcomes (in MAZI’s case, will the effort committed to the toolkit help resolve the community goal). Future work could be carried out to understand participants’ perspectives around trust in more detail.

## 6.5 Infrastructure time

In Year 2 (D2.5) we reflected on the future potential challenge Creeknet might have in supporting ongoing MAZI deployments: what Day and Cupidi (2004) describe as the tension between closed time and funding frame ‘projects’ as opposed to open ended ‘initiatives’. From the beginning of MAZI participants have noted concerns about the duration of our involvement. SPC’s long standing commitment to the area has mitigated concerns, along with clear and transparent conversations, but we have had to consider what sustaining MAZI in the long term implies. Zurich (Kraftwerk1) pilot colleagues have introduced us to the concept of ‘infrastructuring’: the interrelated social practices, policies, communication and capabilities as well technical and organisational elements, that all need to be managed in a host organisation for an innovation to be adopted (Star and Ruhleder 1996), and the tension between ‘project time’ against ‘infrastructure time’ timeframes (Karasti et al. 2010). Introducing new technologies can be achieved as a specific project, but broader consideration (and time) has to be spent around introducing concepts, finding shared ways of working, and exploring how a new socio-technical system might become part of an individual or group practice. In short - it takes time (Botero and Hyysalo, 2013).

To respond to this challenge, a central approach for Creeknet has been to operate in community spaces and at participants’ preferred pace. Often, this has meant taking part in the groups’ own existing meetings and events before inviting groups to a MAZI event, to build trust and gain an understanding of ways of working. Regular MAZI meetings, the “MAZI-Mondays” have proved successful, enabling potential participants to keep in contact and have a clear channel for contacting the Creeknet team.

## 6.6 Impact of the Creeknet pilot on the MAZI toolkit

The MAZI pilots have been structured to enable feedback to the consortium as a whole, the technical development team, and the other pilots. As the second pilot to start (in M5), Creeknet benefitted from early findings from the Berlin pilot, and has been able to offer contributions to the wider consortium for the majority of the project’s timeline. Strong connections were made in particular with the UnMonastery pilot, with SPC pilot team members and UnMonastery colleagues visiting each other’s pilot sites, actively contributing expertise and exchanging knowledge.

A particular strength of the Creeknet pilot has been the long standing relationship that SPC has with the local Deptford Creek area, and the prior experiences of both SPC and OU around community networking. This has enabled rich insights into the current challenges and opportunities around DIY networking and its practical implementation in neighbourhood settings, with a wide range of engagements (over 30 groups) that have provided insights for the consortium and toolkit development.

#### **On community engagement**

- Informed methods for engagement in community settings (e.g. regular events held in community settings, like MAZI-Mondays, expertise through long term community technology engagement)
- Testing and synthesis of pilots' methods to help enable trajectories across pilots and through the duration (e.g. use of Berlin unboxing method to complement existing practice, introduction of UnMonastery design templates: brought together with Creeknet methods and custom MAZItoolkit 'workshop deployment' for Edinburgh DataFest event, repeated in Creeknet Outreach event, and final 'workshop approach' used in final Edinburgh Workshops/Symposium)
- Active cross fertilisation across pilots, repeat visits to UnMonastery pilot locations, participation in INURA Romania conference, participation in UnMonastery IR11 workshops (Edinburgh 2018)
- Reflections on roles of 'academic' and 'practitioner' partners (British Conference on Autoethnography)

#### **On technology**

- Continued active engagement with toolkit platform, providing detailed input into the technical requirements of deploying in real world settings (e.g. usability for novices; ability for rapid installation and backup; enabling external sensors; ability to add to existing networks) feeding into WP1
- Explorations around deployments of MAZIzones within larger community network settings
- Physical design requirements for deployment in outdoor and adverse environments (e.g. long term in busy music venues, in temporary occupied spaces, on river wall): feeding into WP1
- Research and outreach around self-replication of images and value of custom configurations as artefacts to be archived and disseminated (e.g. Establishing connection with Berryboot, Brazil)
- Explorations of language provision (through requirement for Reverso, Central St. Martin's cleaners, La Cambre students in Brussels, indigenous Brazilian language)

#### **Documentation**

- Active reporting of technical challenges and proposals through github and mailing list channels (e.g. 72 of 155 raised MAZI portal requests logged by Dec. 2018 came from the Creeknet pilot)
- Input of Creeknet deployment stories to D4.8 ebook, technical guide and online space
- Active input to project wiki documentation texts
- Generation of Creeknet specific guides, information sheets, community engagement tools (shared across the consortium)
- Contributor to Volos booksprint

## 7 Sustainability

At the end of MAZI, we turn to reflect on the extent to which onward sustainability might have been achieved, and the future outlook of Creeknet. Current engagements with local groups indicate that there is continued and ongoing interest in the themes identified by the MAZI project, and these constitute existing aspects of SPC's broader ongoing work in Deptford. 'Creeknet' is a concept that has focussed activities around community networking in the Deptford area on the MAZI platform, and while MAZI as a funded project will end, DIY networking conversations have been started, MAZIZones have been deployed and there is ongoing appetite by participants to continue explorations. SPC, as a local community organisation will continue to be active in the Deptford area and an advocate and informal mentor of DIY networking approaches. SPC has shown that it is a resilient organisation and capable of continued operation even in the face of major challenges, and has shown the value of EU projects working with well-established small scale local community organisations that have existing strong networks, giving the work a natural sustainability.

The OU's long standing relationship with SPC will continue, and the OU has interest in continuing the work as the case for offline networked learning has been proven through MAZI, and evidenced in a number of educational settings, including with partners who have explicitly identified a desire to seek future collaborative funding bids. The Creeknet team will continue to keep in contact with MAZI consortium members and groups that we have established contact with across Europe and seek opportunities to develop future work.

SPC in its local community technology role will continue to both informally support MAZI deployments and acting as a locus for conversations around the key topics of self-provisioning, autonomy and ownership of the means of digital production and self-publishing. We already have examples of MAZI participants promoting and further engaging other communities with MAZI concepts and tools independently of the Creeknet team. The ongoing Wireless Wednesdays that inspired MAZI-Mondays, hosted by SPC, will continue to run as a weekly focus for locals to work collectively and on their own technology projects and to debate surrounding issues as an ongoing community of practice. MAZI channels of communication (github, mailing lists) will strengthen the potential routes for discourse. MAZI outreach events have successfully ignited further interest in the work and we will be continuing to disseminate completed outcomes and ongoing activities.

We can see examples of (1) autonomous use of MAZI, independent from the MAZI Creeknet team, including posts to MAZI support mechanisms (toolkit mailing list, github issues list); (2) independently initiated uses with existing Creeknet contacts reaching out themselves to others, and suggesting and supporting independent deployments; (3) requests for onward support from current MAZI users; (4) desire for collaboration on future funding bids to enable resourcing of continued work (5) Unexpected appropriations and use cases (6) Independent promotion of the MAZI concepts. Key examples include;

- Creekside Discovery Centre continuing to work with the Creeknet team, including initial meetings to discuss potential funding bids
- Boaters (Friends of Deptford Creek) using Sandstorm.io as an alternative to corporate cloud services, and offering a boat as a platform for a CDC monitoring station
- More Deptford musicians coming forward and asking for MAZI installations similar to Babar Luck and Patrick Lyons' custom deployments: a theme emerging
- The MayDay Rooms archivist independently installing MAZI toolkit with 56a InfoShop
- Andrea Berardi (Cobra Collective) including MAZI in onward bids to explore community reporting and environmental monitoring in rural Guyana and promoting MAZI within his NGO and academic circles who have in turn now started conversations with the MAZI team
- OU ZEST Zambia team continuing use of MAZIZones for building communities of practice amongst teachers in rural Zambia: two other International Development Groups requesting future MAZIZones to support networked learning and shared knowledge construction in developing countries where internet and power cannot be assured
- Central St. Martins onward use of MAZIs in a school initiative and planning to use MAZI as a virtual studio for a new cohort of undergraduate students

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- Independent operation of MAZIs in the art school at La Cambre, Brussels and further investigations into alternative DIY networking tools
  - Unexpected appropriation of the Guestbook as an evaluation tool (ScienceMadeSimple)
  - Unexpected re-imaginings of the MAZIzone: as a virtual studio (Central St. Martins, La Cambre); as a radical archive (MayDay Rooms, 56a InfoShop)
  - Independent promotion of MAZI in the media (e.g. Raspberry Pi official magazine plaudit “top 5 project for social good”; MAZI image dissemination by Berryboot)

## 8 Future directions

There are several promising avenues for future directions for the Creeknet work. As well as the general ambition that we will continue to collaborate with MAZI consortium partners and seek future opportunities and ways of developing MAZI work, there are a number of specific potential developments to be explored for the Creeknet pilot team:

- (1) Creekside Discovery Centre have shown a commitment to future work and seeking funding collaborations. Further sensor stations are planned, at the Hoy Steps, part of the Year 2 activities; and hosted by one of the boaters in Friends of Deptford Creek. Through MAZI, another OU initiative has been introduced to CDC, offering an offline network species recording system, allowing participants in low tide walks to record the type and number of species they observe on low tide walks, and then to review the whole class's collected observation when they return to the CDC classroom. Combined with the MAZI sensing system, this enables richer data collection for CDC and longitudinal recording of environmental conditions. Our ambition is to seek further funding between CDC, OU and SPC to continue this work. We are exploring how this combined set of locally managed networks of environmental sensing may form the basis of research into how community organisations can adopt low cost and locally managed technologies to enhance their capacity and offerings, and understanding the barriers to adoption.
- (2) Integration of Proboscis' Bookleteer software into MAZI code to enable local production of paper booklets from digital assets to enable wider dissemination in areas where not all participants have access to networked devices (smartphones/laptops). This resulted from the London cross fertilisation event discussions in Month 18, and continued into the the Year 3 'widening impact events'. This has led to conversations between Creeknet, Common Grounds, Proboscis, Cobra Collective and Central St. Martins' School of Art about seeking avenues for collaborative bidding to make this adaption a reality, and for its trialling in pilot locations (e.g. Berlin, Guyana, Papua New Guinea, Haiti).
- (3) Future remote offline networking for supporting communities of practice in educational practice through the OU, extending OU ZEST Zambia work, and also with community mental health nurses in Guyana, which also links across with Bookleteer work. The success so far of MAZI as part of the OU ZEST work has led to discussions around potential MAZI use in distance education in Myanmar (OU IDO TIDE project), and initial conversations to discuss how MAZI could support community based education for girls who have left schooling early in Zimbabwe. MAZIZones could be a mechanism for distributing resources for girls, and as a community of practice platform for their tutors (OU IDO SAGE project, supporting the 'No Girl Left Behind' project). Explorations around remote and rural networking for community education may also benefit from contacts made with the CAPS funded Grassroots Wavelengths project (<https://capssi.eu/caps-projects/grassroots-wavelengths/>).
- (4) Further explorations into storing and dissemination of self-replicated MAZI images. Ensuring easy and rapid back-up of content created in MAZIZones is an important onward goal, and further to this we have been active in encouraging the recognition of the customised images of the MAZI toolkit themselves as valuable resources to be shared. Inspired by our contacts with Alex Goldcheidt (Berryboot, Brazil), who continues to independently promote the MAZI image (<https://berryboot.alexgoldcheidt.com/>), and Pierre Huyghebaert's explorations in La Cambre, the Creeknet team are looking to identify routes for further develop this process, seeing it as a valuable route towards onward sustainability of the MAZI concept.
- (5) With current debates about data privacy, commercial and government harvesting of data, Creeknet communities have shown an awareness and appetite to debate and reflect on how they might control and secure their data. Both in Creeknet and the wider MAZI project we have been asked about the data security of content on MAZIZones, which has led us to consider exploration around encryption tools and to future conversations with researchers who have worked on EU projects more focussed on these specific areas, such as D-Cent (<https://dcentproject.eu/>).

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## 10 Appendix A: Engaged groups

Below is a list of groups successfully engaged by Creeknet from 2016-2018

Engaged community	MAZI zone?	Level of engagement	What changes have we seen? (learning/organisational/relational/norms/social networks)
APT	No	APT host SPC mesh equipment that has been updated to redistribute access along Creekside allowing MAZIzone connection to internet gateways when needed.	Connections made to the Creeknet partners (social network)
Creekside Discovery Centre	Yes	Active interest, keen to try out MAZI toolkits to sense the environment and extend their practices. Customised Raspberry Pi Zero sensing system and introduced to offline network system for species identification, MAZIzone explorations.	Reflected about how technologies might be used to extend practice (potential normative change). Offline networking valuable as fieldwork in a situation where standard connections not possible. Active engagement in thinking about data privacy. Low cost DIY approach to tech in line with their organisation's approach to work. Customised Raspberry Pi Zero sensors installed, introduction to Trevor Collins offline network system (learned about technologies). Contacts made with Minesweeper and the boats, discussion about Minesweeper hulk as an eco-reef (new relationship made)
Undercurrents gallery	Yes	Hosting a MAZIzone to archive events and collect community memories. Artist Karen Barnes convenes changeover between events and is cumulating resources to be uploaded on an updated MAZIzone.	Learning about use of local technologies for recording arts events. Change in organisational method for archiving events.
Minesweeper Collective	No	Hosted MAZI-Monday sessions, initial enthusiasts, loss of the Minesweeper ship has meant focus has shifted to work in Undercurrents gallery	Common ground around DIY solutions to community challenges: learned about offline networking. Hosted early Creeknet events. Social network extended: contacts made with Creekside Discovery Centre and Minesweeper hulk now being considered as CDC supported artificial reef for wildlife. Active participants in London cross-fertilisation event
Steven Lawrence Centre	No	Hosted MAZI-Mondays and Cross Fertilisation event but little interest shown in onward participation	Hosted MAZI-Monday events and London cross-fertilisation event and built social network to learn more about Creeknet engaged groups up and down the Creek; however did not engage with MAZI beyond initial introduction.



Friends of Brookmill Park	No	Early participants exploring self-publishing. New environmental project means increased interest in using networked tools. SPC hosts brookmillpark.deptfordcreek.net website which presents the information people need to join mailing list and find out about the park.	Training in locally managed technologies for recording meetings, and self-publishing (learning). Connections made with Creeknet engaged groups along Deptford Creek (e.g Friends of Deptford Creek, Karen Barnes, Minesweeper).
Redstart Arts	Yes	Keen to explore MAZI scenarios and use networked technologies to extend their educational and awareness activities	Hosted MAZI-Monday events (social networking), explored use of MAZIzone for self-publishing and broadcasting activities from base in the Brookmill Park (learning about networked technologies).
Hoy Café	Yes	Enthusiastic participants supporting opening of the Hoy Steps, engagement in local networking and storytelling. Personal circumstances have led to disengagement but desire to re-engage later. MAZI deployed.	Hosted MAZI-Monday events (social networking), explored use of MAZIzone for self-publishing (learning about networked technologies). Catalyst for community clearing of the Hoy Steps (reported in D2.5)
Friends of Deptford Creek	Yes	Active participants using tools demonstrated in MAZItoolkit via SPC's server to support group's activities, engaged with self-publishing. Threat to boaters' moorings means active interest in using networked tools. MAZI deployed, Sandstorm at SPC preferred. Future host for CDC sensor system.	Explored use of MAZIzone for recording meetings and recording stories, moved to using open source tools on SPC server (learning about networked technologies, normative change); formally constituted as cooperative (organisational change)
Karen Barnes	Yes	Active participant and critical tester of MAZI tools throughout development: 'Eileen Ford' installation and further experimentation expected. MAZI deployed and upgraded	Exploring DIY networking tools, integrating MAZIzone into practice as a means of recording and self-publishing work (organisational change, learning about networked technologies); Active participant in providing feedback on usability. Has developed personal digital skills (cognitive change)



Wonky Prong	Yes	Terry: Active participant with interest in promotion of community garden and wildlife observation. MAZI deployed but no longer used here, however inputs recordings into Undercurrents gallery	Exploring DIY networking tools, integrating MAZIzone and camera into practice as a means of recording and wildlife visitors to garden (organisational change, learning about networked technologies); participates in recording events for Undercurrents gallery. Attended Berlin cross-fertilisation event to exchange practice with Berlin community gardeners (social networking)
SELCE	Yes	Interest in tools for promoting activities and supporting organisational practices, Autonomous powering. MAZI deployed.	Exploring DIY networking as complementary to DIY powering work, MAZIzone installed to enable self-publishing and promotion of work (learning about networking technologies)
Pink Palace	Yes	Support tenants communication and information exchange (MAZI deployed but so far little used)	Exploring DIY networking tools (learning about networking technologies), ambitions for self-publishing but not yet realised
Central St. Martins/ Reverso	Yes	Kimchi, Reverso, Virtual Studios, Islington, Tidemill Gardens, MAZI also deployed to help contract cleaners to politically organise.	Exploring DIY networking tools (learning about networking technologies), integrating MAZIzones as virtual studios into practice (normative change), connecting with Creeknet groups e.g. through working in Tidemill Gardens, introducing students to Babar Luck (extending social networks), political organisation of contract cleaners (normative and organisational change)
MayDay Rooms	Yes	MAZIzone as a tool for preparing and populating documents repository with a set of collected archives.	Exploring DIY networking tools (learning about networking technologies), integrating MAZIzones as archive and cataloguing tool (normative change), promoting MAZI to other archivists (learning, social networking)
56a InfoShop	in process	Setting up MAZIzone to help digitise archives: successful as fast upload and easy shared collaborative working	Exploring DIY networking tools (learning about networking technologies), integrating MAZIzones as archive and cataloguing tool (normative change)
Collusion	Yes	Temporary Workshop MAZIzone for related project: cloned from workshop.mazi and used by SPC to record meeting exchanges	Exploring DIY networking tools (learning about networking technologies), integrating MAZIzones as meeting recording tool (normative change)

Babar Luck	Yes	Musician: MAZI deployed as self-promotion tool. Performances recorded onto MAZI and uploaded to public website	Exploring DIY networking tools (learning about networking technologies), integrating MAZIzones as meeting self-publishing and promotional tool (normative and organisational change); exchanging experiences with students and tutors in CSM (social networking)
Patrick Lyons	Yes	Musician and Raconteur (MAZI deployed) as a result of hearing about Babar Luck's MAZIzone	Exploring DIY networking tools (learning about networking technologies), integrating MAZIzones as meeting self-publishing and promotional tool (normative and organisational change)
Stowage Films	Yes	Building a working archive of Deptford still images and films taken by Gordon over 40 years. To be presented in gallery exhibition Spring 2019	Exploring DIY networking tools (learning about networking technologies), integrating MAZIzones as meeting self-publishing and promotional tool (normative and organisational change), connecting with range of Deptford Creek community groups through MAZI-Mondays and attendance at London cross-fertilisation event (social networking)
TideMill Gardens	Yes	Occupation protestors offered a MAZIzone to tell their story and promote their cause. Rebuffed, people concerned about what MAZI is (the project). SPC later visited to do photogrammetry archiving with CSM: a neighbour has offered to host a MAZIzone as an archive.	Introduction to MAZI and DIY networking (learning about networked technologies). Photographic recording of the space has been made with a plan to broadcast in the local area via a MAZIzone. CSM introduced to Deptford Creek groups (social networking)
Sensing the radio environment	Yes	SPC participants exploring radio sensing techniques to begin monitoring and recording RF use in the Creeknet area	Introduction to MAZI and DIY networking (learning about networking technologies), connecting with community networkers in Creeknet (social networking) to visualise as a topic for community debate, a host for the Software Defined Radio mechanism (USB) that stores and disseminates research records.
La Cambre	Yes	Printmakers in Brussels art college exploring MAZI as a means to capture reflections on a journey across the Congo; also as a means of encouraging art student interaction.	Introduction to MAZI and DIY networking (learning about networking technologies), integrating MAZIzones as student knowledge sharing space (normative change) connecting with community networkers in Creeknet (social networking). Some existing familiarity with embedded computing here that continues to be promoted by staff.
Greenwich Borough Hall	Yes	MAZI installed for occupation to broadcast the group's intentions	Introduction to MAZI and DIY networking (learning about networking technologies), use of MAZIzone to self-publish in addition to printed media (organisational change)

OU: Zambia	Yes	4 x MAZlzones set up as teacher education workshop tool to get teachers in rural Zambia to access and share resources (Aug 2018). Second deployment in Dec. 2018, 7 x MAZlzones.	Introduction to MAZI and DIY networking (learning about networking technologies), use of MAZlzones to share resources digitally rather than on paper (organisational change); to educate teachers about digital technologies (changing what their participants learn about in workshops); to help build communities of practice (social network creation amongst their participants)
Science Made Simple	Yes	Science Education company using MAZlzone as lightweight means of evaluating family science talks.	Introduction to MAZI and DIY networking (learning about networking technologies), use of MAZlzone as evaluation tool, extending the offering to their audiences (normative change, impact on their audience)